

United States Patent [19]

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[54] PORTABLE ULTRASONIC DOPPLER SYSTEM

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128/663; 73/597, 628, 861.25, 821.25

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[57]

ABSTRACT

A portable ultrasonic Doppler System for sensing movement, e.g. fetal heartrate, within a body. A handheld unit includes a housing containing an ultrasonic transmitter and an ultrasonic receiver. The ultrasonic receiver detects ultrasonic energy emitted from the ultrasonic transmitter and reflected off of the moving object being monitored. The handheld unit also includes a radio frequency transmitter for transmitting a carrier modulated in accordance with the response of the ultrasonic receiver. A radio frequency receiver unit, separate from the handheld unit, receives the signal broadcast by the handheld unit. The receiver unit drives a speaker or earphone to provide an audio output for listening to the moving object being monitored. Digital display and memory circuitry is also provided which can be used in conjunction with said receiver unit to store and display data indicative of the movement being monitored. In conjunction with the handheld unit, a patient being monitored becomes the radio frequency antenna and the doctor becomes an extension of the antenna ground plane, providing a highly efficient radio link between the handheld unit and the receiver unit.

20 Claims, 12 Drawing Figures

